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### Reuse of abandoned oil and gas wells for geothermal energy production

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**10<sup>TH</sup>**  
**European Geothermal PhD Day**  
**2019**

**25-27 Feb 2019**

**PISA 2012**  
**BOCHUM 2017**  
**DELFT 2015**  
**SZEGED 2013**  
**POTSDAM 2010**  
**REYKJAVIK 2011**  
**DARMSTADT 2014**  
**ZÜRICH 2018**  
**BARI 2016**

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# Welcome

Dear participants,

Welcome to the 10<sup>th</sup> anniversary of the **EGPD**. This event is intended to connect PhD researchers from all over Europe that are working in the field of geothermal energy. This year we have received 57 contributions of early-career scientists from various research fields and countries. We are therefore proud and happy that so many of you made your way to Potsdam. The conference program reflects this variety of participation with a broad spectrum of contributions. One day packed full of very interesting keynote speakers, and poster presentations, which will be the trigger for some fruitful discussions and a final field trip will round up the event.

Remember that lunch, dinner, and coffee is on us! We hope you will enjoy the 10<sup>th</sup> EGPD and thank you for coming.

The EGPD 2019 organizing committee.

# Organizing Committee

Anna Jentsch	<i>University of Potsdam</i>
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# Partners & Sponsors



*We would like to especially thank our partners and sponsors for supporting the European Geothermal PhD day 2019! They allowed us to keep this conference free of charge and gave us the chance to financially support several PhD students with their travel costs.*

# Abstracts

# Reuse of abandoned oil and gas wells for geothermal energy production

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The 2030 UN Agenda for Sustainable Development and the Paris Agreement on Climate Change, both adopted in 2015, represent two fundamental contributions to guide the transition towards an economic model that aims, not only profitability and profit, but mostly social progress and environmental protection.

“Responsible production and consumption” is one of 17 Global Goals that make up the [2030 Agenda for Sustainable Development](#): in order to achieve this goal it requires that every nation urgently change the way it produce, consume, recycle goods and it manage natural resources.

The main aims for energy company are therefore to provide energy solutions that are increasingly more sustainable, away from those based on fossil fuel and to guarantee access to low-cost energy, through technological development and environmental value.

In this process, the energy production based on geothermal resources deriving from disused Oil & Gas wells represents a considerable economic potential: it can solve problem associated abandoned or suspended wells near municipalities and allows long-term scenarios for exploitation to be hypothesised even at the end of the production cycle of hydrocarbon wells, to the benefit of end uses in the industrial, civil and agriculture.

The aim of our work is to highlight the most advantageous hypotheses for the exploitation of the geothermal potential linked to the reuse of existing wells located in Italy, already subject to concession of cultivation of liquid and gaseous hydrocarbons and currently no longer exploited.

The research will involve three main different phases of work:



- analysis of the specific legislation and regulatory regimes potentially activated for the purpose of the retrofitting abandoned Oil & Gas wells;
- analysis of geological data and estimation of abandoned wells' energy potential by providing an accurate and realistic representation of heat flow and temperature distribution;
- analysis of plants development scenarios in order to understand if it is possible to content not only internal production needs but also the final energy use needs in the territory surrounding the production plants (civil and agricultural districts).